Sudden Oak Death -Disease Threatens Park Trees

NATIVE OAK AND TANOAK TREES in Marin County are being killed by a microorganism that produces a disease commonly known as "Sudden Oak Death." This disease is widespread in coastal California and is commonly found in tanoak in the understory of coast redwoods, and in evergreen hardwood forests dominated by oaks, madrone and California bay. Sudden Oak Death (SOD) is a disease of wildlands and naturally occurring trees. There are no known cases of planted trees becoming infected.

Currently, Marin and Santa Cruz counties are considered to be heavily infested by SOD. Areas with heavy infestations of the disease may be at increased risk of fire due to the increase in fuel caused by dead trees. Many mammal and bird species could lose important sources of food or shelter in these areas.

Point Reyes National Seashore has joined a regional effort to determine if SOD is present in the park's forests. Samples collected from trees suspected of being infected by SOD will be sent to a lab for testing, and a map will be created. Data collected in this effort will provide the information needed to develop a management plan.

Researchers at UC Davis and UC Berkeley are trying to learn as much as they can about this new disease. There is currently no effective treatment. According to researchers, treatments that may be developed in the future will not be practical to apply across large areas . Efforts at the Seashore will focus on minimizing human-caused spread of this disease.

BIOLOGY

Dying tanoak trees were reported as early as 1995 in Marin County. By June of 2000, a researcher at UC Davis had isolated the pathogen responsible for these unexplained tree deaths. SOD is caused by a newly identified microorganism called *Phytophthera ramorum*. *P. ramorum* is a water mold that acts like a fungus, attacking the trunk of a tree and causing a canker. It is considered a very aggressive pathogen because it can kill a perfectly healthy tree. Other secondary decay organisms such as beetles and fungi often move in after the tree is infected and finish the job. The name Sudden Oak Death is a misnomer. Infected trees may survive for one to several years as the infection progresses. When the tree finally dies, the leaves may turn from green to brown within a few weeks, hence the appearance of sudden death.

The pathogen affects different species in different ways. Tanoaks and oaks are killed by the disease; other species affected are known as "foliar hosts" because their leaves and twigs may be infected, but the disease only occasionally kills the plant.

SYMPTOMS

On oaks and tanoaks, cankers form, appearing as a dark or black area on the trunk, often bleeding a black or reddish ooze. Species killed by SOD are tanoak, coast live oak, California black oak, and Shreve oak. Leaf spots and twig dieback are the symptoms caused on foliar (leaf) hosts, which include California bay, madrone, big-leaf maple, huckleberry and California honeysuckle. The presence of *P. ramorum* can only be confirmed by a laboratory test as many other diseases cause similar symptoms . Infection was recently confirmed in redwood and Douglas fir trees.

GEOGRAPHIC EXTENT

At this time, SOD has been confirmed in thirteen counties in the United States. Twelve of these are in the Bay Area, including Marin county. One county is in Oregon, just north of the California border. It has also been found in several countries in Europe and may have been introduced to the United States on a rhododendron imported from European nursery stock.

REGULATIONS

A federal and state quarantine is in effect, prohibiting the movement of any plant material which may carry SOD.

HOW IT IS SPREAD

There is much still to be learned about how SOD is spread. The pathogen produces spores, which have been found in rainwater and soil. It is known that the spores can travel short distances in water, such as in rain splash or fog drip. Foliar hosts, such as California bay can harbor large quantities of spores. Laboratory testing has found no evidence that SOD can spread from an infected oak tree to another oak tree.

PREVENTION

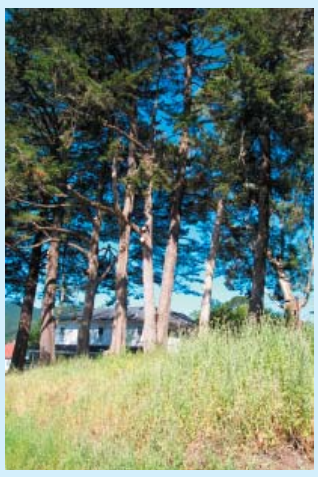
Preventing the human-caused spread of SOD will give forests more time to produce new seedlings that may be resistant to this disease. Preventive actions are especially important when traveling from an infested county such as Marin to non-infested counties, such as in the Sierra Nevada.

Yosemite National Park is requesting visitors from the Bay Area to respect the state and federal quarantine and to take precautions when traveling to Yosemite to prevent the spread of SOD. *(See also, "What You Can Do to Help...")*

WHAT YOU CAN DO TO HELP WHEN VISITING WILDLANDS

- Do not collect or remove any plant material such as wood, branches, leaves or acorns, or any soil.
- Do not bring firewood, or any other plant material into the park.
- Stay on established trails.
- Clean soil and mud off shoes, bicycle tires, horse's hooves, pet's paws and vehicles.
- Visit www.suddenoakdeath.org for more information.

Wildfire Prevention
modifying fuels and human behavior



Creating defensible space and fuel breaks involve modifying the structure of fuels, a key principle of wildfire prevention. Vegetation fuels extend horizontally and vertically. Breaking fuel continuity changes the path a fire travels and the way fire behaves.

The fuels reduction project pictured here was completed by the parks' hazardous fuels crew and illustrates the practice of "limbing up", removing lower branches from trees to eliminate ladder fuels that could carry a ground fire to the tree canopy.

The other key to wildfire prevention focuses on human activity.

WHAT TO DO AT HOME

- Clean gutters & chimney.
- Install proper screening on top of chimney or stovepipe.
- Clear vegetation 30-100 feet around structures.
- Install a Class-A, fire resistent roof.
- Install & maintain a smoke detector.
- Create a non-flammable zone around wood stoves.
- Establish escape routes.
- Have an evacuation plan.
- Teach children about fire safety.

WHAT TO DO IN WILDLANDS

- Make sure it's legal to have a campfire before you make one.
- Use established fire rings.
- Have water & a shovel on hand.
- Keep flammable material away from campfire.
- Thoroughly extinguish all smoking & campfire materials, and never throw cigarettes out of a vehicle.
- Carry a fire extinguisher in your vehicle.
- Teach children about fire safety.

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